JVC

CD PORTABLE SYSTEM

PC-X110 B/E/G/GI/EN
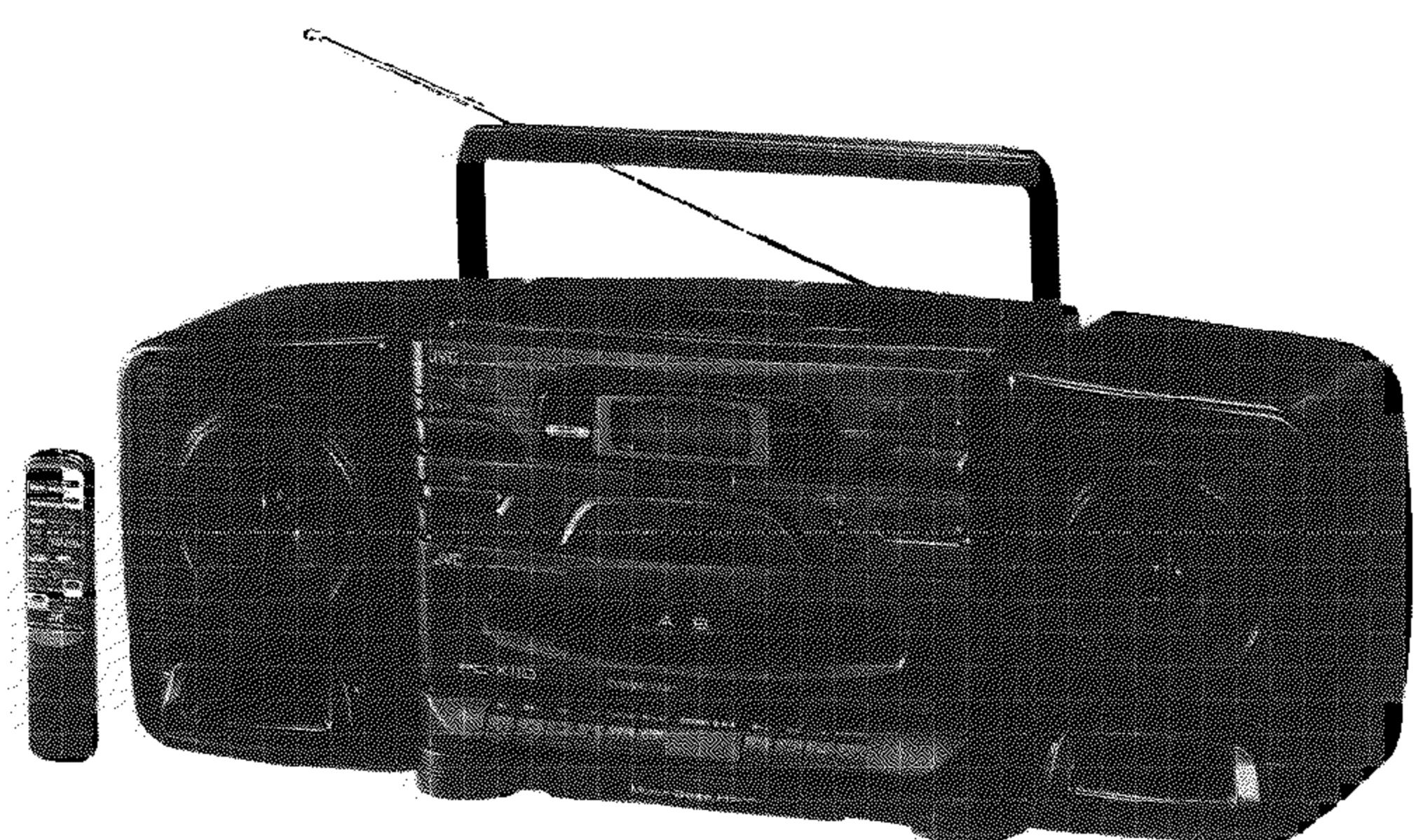
COMPACT

disc

DIGITAL AUDIO

| Area Suffix	
B	U.K.
E	Continental Europe
G	Germany
GI	Italy
EN	North Europe

Contents

1. Safety Precautions

1. The design this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.

2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacture's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.

3. Many electrical and mechanical parts in the product have special safety − related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of service manual. Electrical components having such features are identified by (⚠)on the schematic diagram and parts list in the service manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of service manual may create shock, fire, or other hazards.

4. The leads in the products are routed and dressed with ties, clamps , tubings, barriers and the like to be separated from live parts, high temperature parts, mpving parts and or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after reassembling.

5. Leakage current check (Electrical shock hazard testing)

   After re − assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock. Do not use a line isolation transformer during this check.

   • Plug the AC line cord directly into the AC outlet. using a"Leakage current tester", measure the leakage current from each exposed metal part of the cabinet, particulary any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exposeed 0.5mA AC(r.m.s.)

   • Alternate check method

   Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500 ohms 10W resistor paralleled by a 0.15 μ F AC type capacitor between an exposed metal part and a known good earth ground. Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC(r.m.s.).This corresponds to 0.5mA

AC VOLTMETER
(Having 1000 ohms/volt, or more sensitivity.)

0.15 µF AC TYPE

1500 Ω 10 W

Place this probe on each exposed metal part.
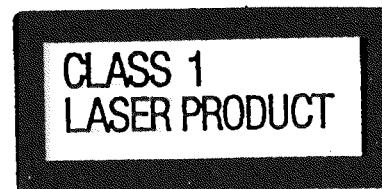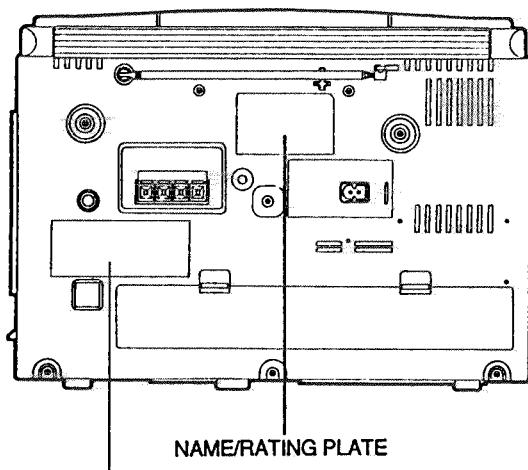
Good earth ground
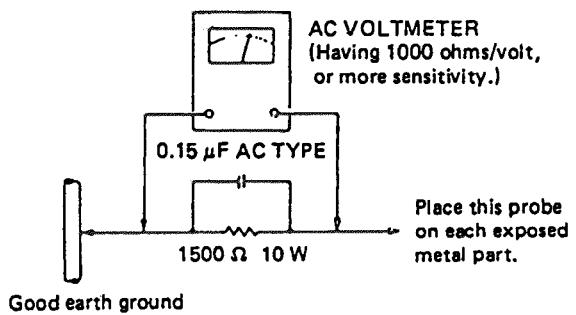
Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintaintaind.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

2. Safety Precaution about PC-X110

IMPORTANT FOR LASER PRODUCTS

1. CLASS 1 LASER PRODUCT
2. **DANGER:** Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.
3. **CAUTION:** Do not open the rear cover. There are no user serviceable parts inside the unit; leave all servicing to qualified service personnel.
4. **CAUTION:** The compact disc player uses invisible laser radiation and is equipped with safety switches which prevent the emission of radiation when the CD holder is open. It is dangerous to defeat the safety switches.
5. **CAUTION:** Use of controls for adjustments and the performance of procedures other than those specified herein may result in exposure to hazardous radiation.
6. **CAUTION:** The laser is able to function, if safety switches out of function. The laser light is invisible, avoid exposure, do not disassemble the laser unit, but replace the complete unit.

IDENTIFICATION LABEL AND CERTIFICATION LABEL

NAME/RATING PLATE

CLASS 1
LASER PRODUCT

ADVARSEL-Der vil udstråles osynlig laserbestråling når apparatet åbnes og aflås- ningsmekanismen frigores UNDGÅ AT BLIVE UDSET FOR LASERBESTRÅLING

DANGER-Invisible laser radiation when open and interlock defeated AVOID DIRECT EX- POSURE TO BEAM.

Obs:
Apparaten innehåller laser
Komponent av höger laserklass
än klass 1.

IMPORTANT (In the United Kingdom)
Mains Supply (AC 240 V~, 50 Hz only)

DO NOT cut off the mains plug from this equipment. If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your dealer.

BE SURE to replace the fuse only with an identical approved type, as originally fitted, and to replace the fuse cover.

If nonetheless the mains plug is cut off ensure to remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the mains supply.

IMPORTANT

DO NOT make any connection to the terminal which is marked with the letter E or by the safety earth symbol or coloured green or green-and-yellow.

The wires in the mains lead on this product are coloured in accordance with the following code:

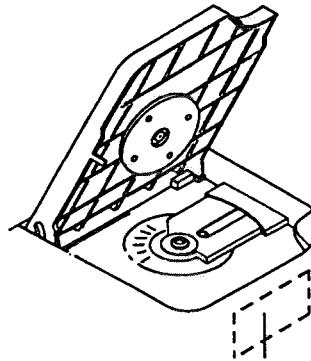Blue to N (Neutral) or Black
Brown to L (Live) or Red

As these colours may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.
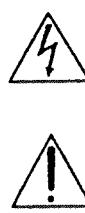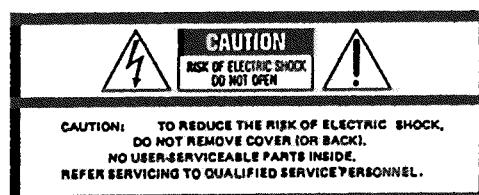
IF IN DOUBT – CONSULT A COMPETENT ELECTRICIAN.

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and main- tenance (servicing) instructions in the litera- ture accompanying the appliance.

Battery P.C. board

⑤ D996~D999

C 301

Main P.C. board

⑦ Antenna wire
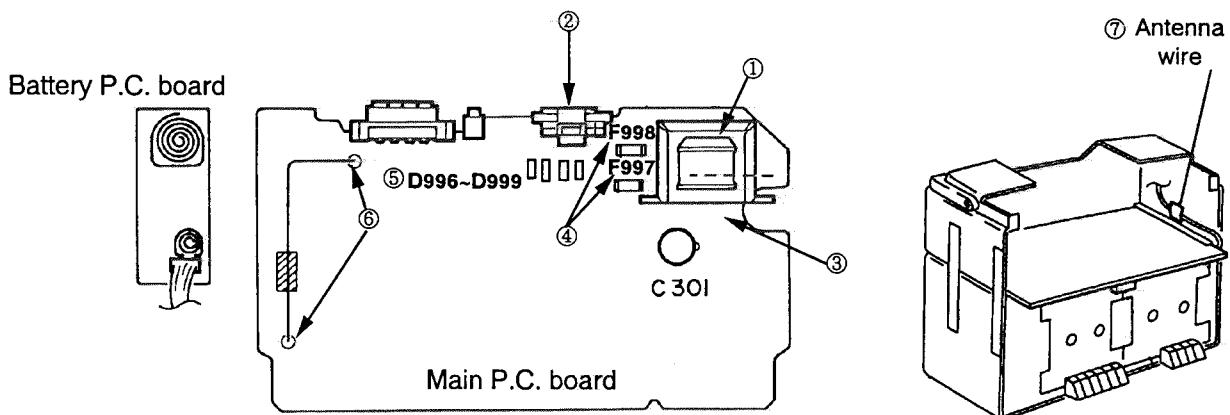
■ Inportant management points regarding safety(Item demanding special safety precautions)

1. Power transformer marking : VTP57P2 – 12C(B/E/G/GI/EN Version : Parts No.)

   The torque of the screw driver for the poewr transformor must be controlled.

2. Concerning the AC socket, the next marking must be confirmed and to avoid print circuit board pattern damage.

   The AC socket must not float from print circuit board.

   •Marking ··· HSC1466

3. Concerning the primary terminal and the adjacent secondary terminal on the print circuit board toprovide proper creeping and spatial distance, solder must not protrude from soldering round.

4. Before installation confirm the fuse capacity indication, (⑨)and (Ⓢ)marks on the fuse holder.

Version	REF.NO	Capacity and mark	Indication on P.C. board
E/EN	F997	T5A/250V	T5A/250V
E/EN	F998	T5A/250V	T5A/250V
B	F998	T5A/250V	T5A/250V

5. Following parts are controlled as the heated parts. confirm that the flammable parts are lifted up the parts in .

   •Diode:D996~D999, IC: IC101, Transistor:Q901 ,Q921

6. The single wire on the Printed circuit board must be fixded with spacer of bond.

7. Wires must be clamped or sccured at the locations shown in the figure so that the wire do not touch to live parts, moving part , hot part, or sharp edges.

3. Main Features

1. **Multi-function CD player with remote control.**
   - CD player with programmed play of up to 20 tunes/ repeat play/random play/intro play function.
   - 8-cm (3-3/16") "CD singles" capability.
2. **24-key remote control unit (CD and tuner operations)**
   - Remote control controls power on/off switching, volume control, SEA electronic equalizer controls, Multi-Bass Horn on/off switching.
3. **Multi-Bass Horn circuit for low-frequency sound reproduction.**
4. **2-Band digital synthesizer tuner with 30-station (15 FM and 15 AM (MW/LW)) preset capability**
   - Seek/manual tuning
   - Auto preset tuning
   - Preset scan tuning
5. **Synchro-record start for CD recording convenience.**
6. **Double-cassette mechanism (Deck A for recording and playback, Deck B for playback).**
   - Metal and CrO₂ tapes can be played back for superior tone quality.
   - Synchro-start dubbing function (normal/high speed dubbing).
   - Relay playback (from Deck B to Deck A).
7. **Timer/Clock function**
   - Timer on/off with preset volume function.
   - Wake-up volume setting with 25 different levels.
   - Sleep timer can be set for up to 120 minutes.

4. Specifications

Compact disc player section

Type	:	Compact disc player
Signal detection system	:	Non-contact optical pickup (semiconductor laser)
Number of channels	:	2 channels (stereo)
Frequency response	:	20 Hz – 20,000 Hz
Signal-to-noise ratio	:	76 dB
Wow & flutter	:	Less than measurable limit

Radio Section

Frequency ranges	:	FM 87.5 – 108 MHz
		MW 522 – 1,629 kHz
		LW 144 – 288 kHz
Antennas	:	Telescopic antenna for FM
		Ferrite core antenna for MW & LW

Tape deck Section

Track system	:	4-track 2-channel stereo
Motor	:	Electronic governor DC motor for capstan
Heads	:	Deck A; Hard permalloy head for recording/playback, 2 gap permalloy head for erasure Deck B; Hard permalloy head for playback
Frequency response	:	63 – 12,500 Hz (with normal tape/ normal speed)
Wow & flutter	:	0.15% (WRMS)
Fast wind time	:	Approx. 120 sec. (C-60 cassette)

General

Power output	:	15.4W (7.7W + 7.7W) at 3 Ω (Max) 10.6W (5.3W + 5.3W) at 3 Ω (10% THD)
Output terminals	:	SPEAKER x 2 (Matching impedance: 3 Ω – 16 Ω) PHONES x 1 (Output level: 0 – 12 mW/32 Ω, Matching impedance: 16 Ω – 1 k Ω)

|		
Power supply	:	AC 240 V, 50/60 Hz (PC-X110B) AC 230 V, 50/60 Hz (PC-X110GI/EN) DC 12 V ("R20" cells x 8)
(PC-X110EN only)	:	Ext. DC 12 V (car battery via optional CA-R120E car adapter)
Power consumption	:	28W (with POWER SW ON) 2.8 W (with POWER SW STANDBY)
Dimensions	:	683 (W) x 250 (H) x 231 (D) mm including knobs
Weight	:	Approx. 7.8 kg with batteries Approx. 6.9 kg without batteries
Accessories provided	:	AC power cord Remote control unit (RM-RX110) Battery "R6" x 2 (for the remote control)

Speaker Section (each unit)

Speakers	:	10 cm x 1
Impedance	:	3 Ω
Dimensions	:	170 (W) x 235 (H) x 202 (D) mm
Weight	:	Approx. 1.3 kg

Design and specifications are subject to change without notice.

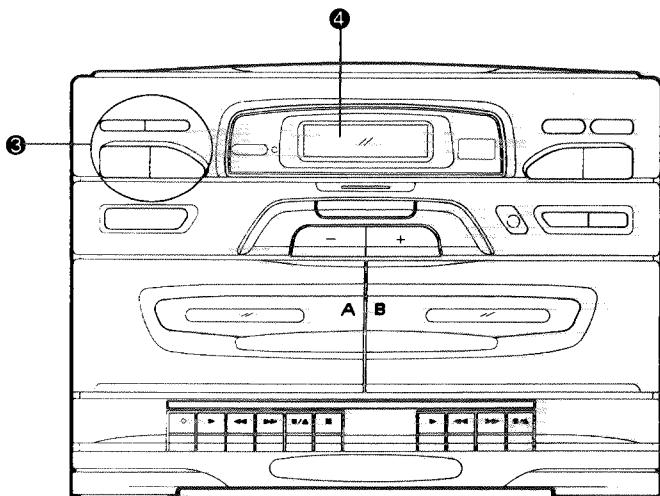# 5. Instructions (Extract)

NAMES OF PARTS AND THEIR FUNCTIONS

● **Top panel**
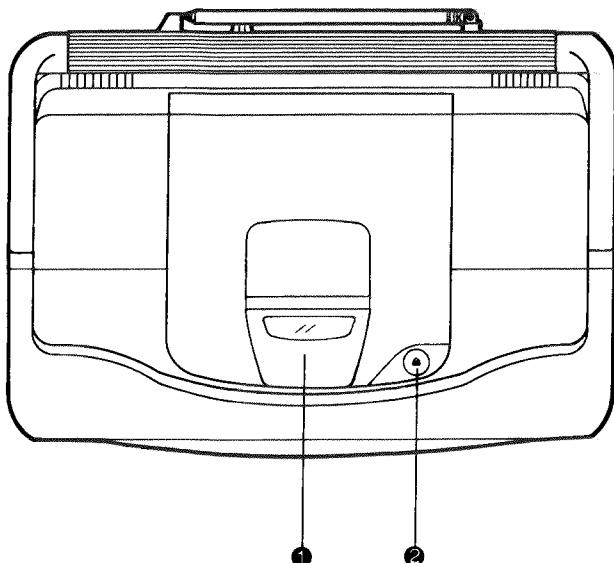
● **Front panel**

● **Disc holder**
● **Disc holder open button (⏏)**
● **CD operation buttons**
  ① SEARCH/SKIP (|◄◄/►►|) buttons
  ② Play/Pause (►II) button
  ③ □/CLEAR button
● **Display window (CD player section)**
  ① Function/Track number display
  ② Playback time display
  ③ INTRO scan indicator
  ④ RANDOM playback indicator
  ⑤ Repeat playback indicator (⊂ ALL)
  ⑥ Music calendar display
  ⑦ PRGM mode indicator
  ⑧ OVER indicator
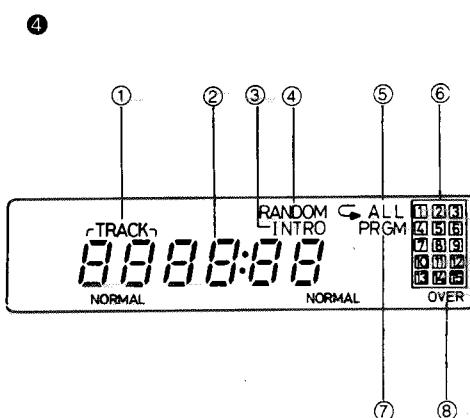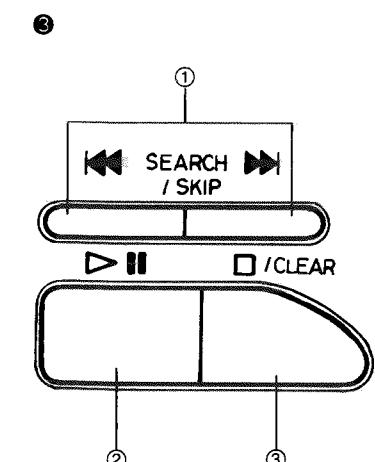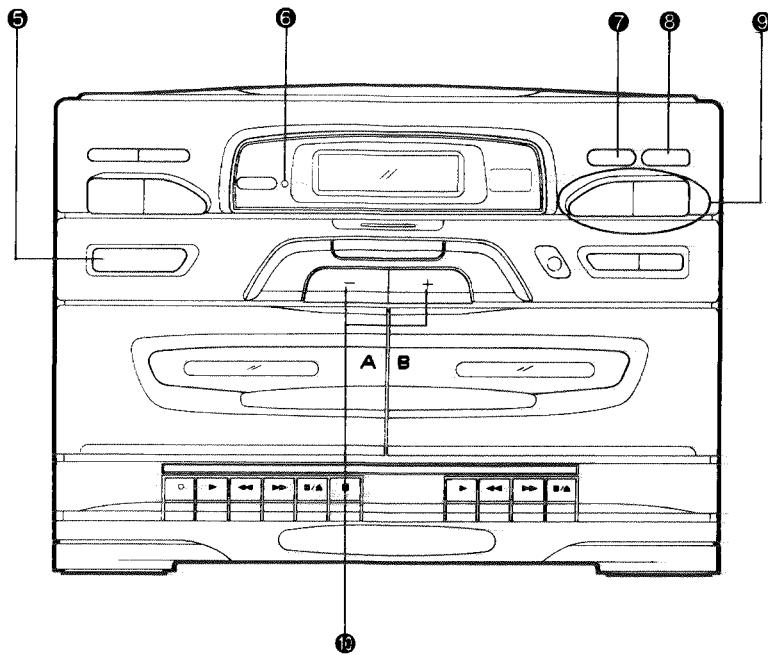
⑤ **POWER button**
⑥ **POWER STANDBY indicator**
(See page 5)
⑦ **PRESET SCAN button**
AUTO PRESET button
⑧ **TUNER (BAND/FM MODE) button**
⑨ **Tuning (Time adjustment) buttons**
DOWN frequency/Hour or minute
UP frequency/Hour or minute
⑩ **VOLUME buttons**
+: Use to increase the volume or tone (SEA).
–: Use to decrease the volume or tone (SEA).
(The level can be changed from VOL 0 to VOL 25.)
⑪ **Multi-Bass Horn button**
on: The Multi-Bass Horn indicator will light.
   Set to this position to listen to the Multi-Bass Horn
   sound.
off: The Multi-Bass Horn indicator goes out.
   Set to this position when the Multi-Bass Horn sound
   is not required.
⑫ **Multi-Bass Horn Indicator**
• Blinks when the VOLUME button is operated.
⑬ **Display window**
(Tuner section)
Band indicator (FM/AM(MW/LW))
Radio frequency display
MONO indicator
STEREO indicator
Preset station display
(Tape deck/amplifier section)
Tape mode display
NORMAL tape indicator
CrO_2/METAL tape indicator
NORMAL speed indicator
HIGH speed indicator
Recording indicator (REC)
(Timer/Clock section)
(See page 44)
⑭ **REMOTE SENSOR section**
⑮ **SEA ELECTRONIC EQ (FREQUENCY) button**
Used to select the electronic equalizer frequency band
(100 Hz/1 kHz/10 kHz) to be adjusted with the VOLUME
button. (The level setting ranges are from –5 to 5.)
⑯ **TAPE (FOR PLAYBACK) switch**
Set this switch according to the type of tape to be used.
CrO_2•METAL: (playback only)
Set to this position to listen to a chrome (type II) or
metal (type IV) tape.
NORMAL:
Set to this position to listen to a normal (type I) tape.
⑰ **DUBBING SPEED switch**
HIGH:
Set to this position when dubbing at high-speed.
NORMAL:
Set to this position when dubbing at normal-speed.
⑱ **Cassette holder (Deck A)**
⑲ **Cassette operation buttons (Deck A)**
○ **REC:**
Press this button with the ► PLAY button to start
recording.
► **PLAY:**
Press to play the tape.
◄◄ **REW:**
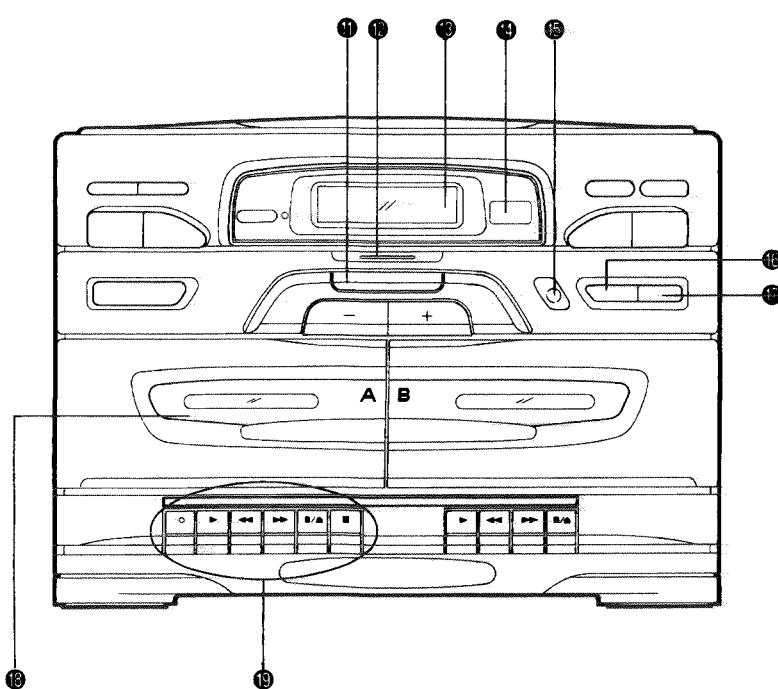Press to rewind the tape rapidly.
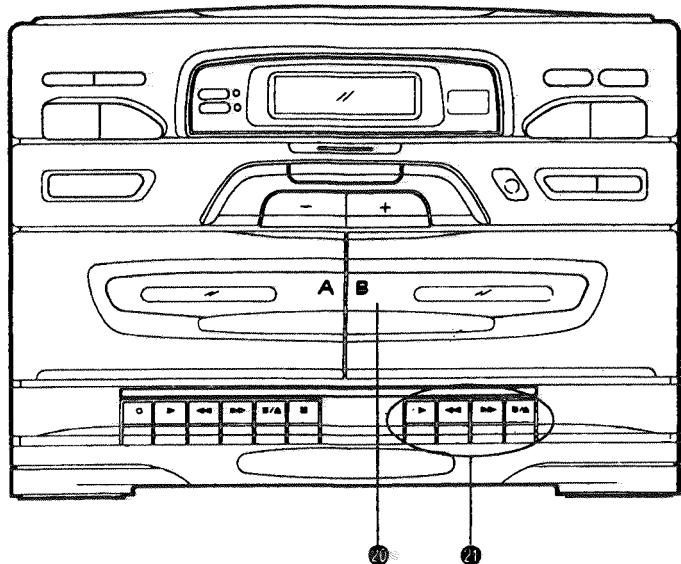►► **FF:**
Press to wind the tape forward rapidly.
■/▲ **STOP/EJECT:**
Press to stop the tape. Pressing this button when the
tape has stopped opens the cassette holder.
II PAUSE:
Press to stop the tape momentarily. Press again to
release the pause mode.

@ **Cassette holder (Deck B)**
@ **Cassette operation buttons (Deck B)**
► **PLAY:**
Press to play the tape.
◄◄ **REW:**
Press to rewind the tape rapidly.
►► **FF:**
Press to wind the tape forward rapidly.
■/▲ **STOP/EJECT:**
Press to stop the tape. Pressing this button when the tape has stopped opens the cassette holder.

Rear panel
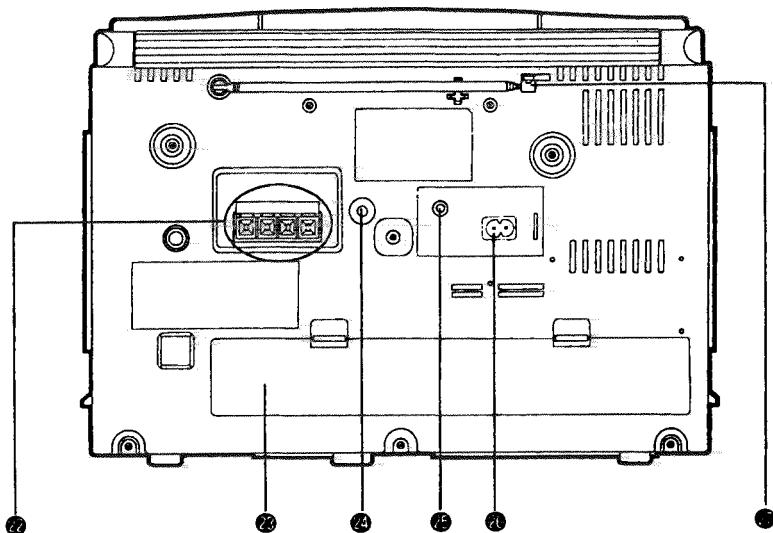
@ **SPEAKER terminals**
Connect the provided speakers to these terminals.
@ **Battery compartment cover**
@ **Headphones jack (PHONES) (3.5 mm dia. stereo mini)**
Connect headphones (impedance 16 Ω - 1 kΩ) to this jack. The speakers are automatically switched off when the headphones are connected.
@ **DC IN 12V jack (◇-⊝-◇) (PC-X110EN only)**
@ **AC IN (AC input) jack**
@ **Telescopic antenna**

REMOTE CONTROL UNIT

The following operations can be performed using the remote control unit.

- Check the functions of the operation buttons carefully and operate them correctly.

JVC
REMOTE CONTROL RM-RX110
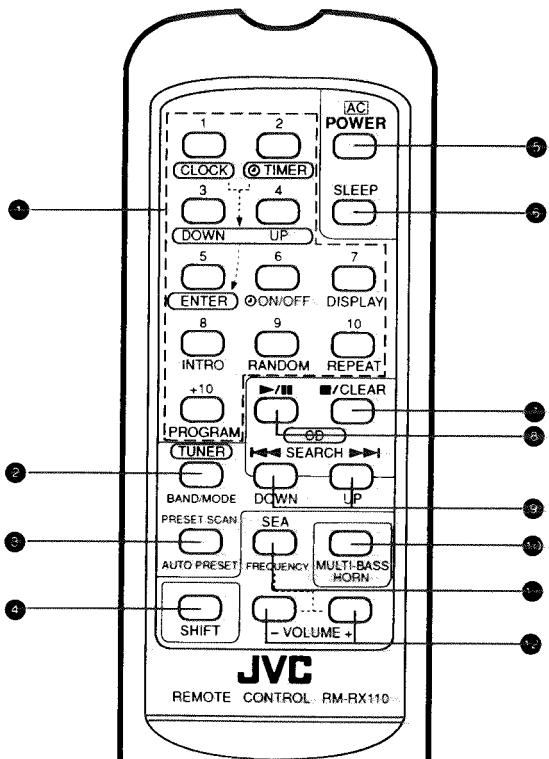
● Track (tune) number buttons (No.1—No.10,+10)
❷ TUNER•BAND/MODE button
❸ PRESET SCAN button
   AUTO PRESET button
❹ SHIFT button
❺ POWER (AC) button
   • When power is supplied from the batteries, even when the button is pressed, the PC-X110 will not be switched on.
❻ SLEEP button
❼ ■/CLEAR: Stop/clear button
❽ CD ►/Ⅱ: CD mode/play/pause button
❾ CD SEARCH/DOWN and UP buttons (I◄◄, ►►I)
   • In the CD mode, to scan to the beginning of a tune and to start forward or reverse search.
   • In the tuner mode, to tune to broadcasts.
❿ MULTI-BASS HORN button
⓫ SEA (FREQUENCY) button
⓬ VOLUME buttons
   +: Use to increase the volume or tone (SEA)
   −: Use to decrease the volume or tone (SEA)

Press the following buttons while holding down the SHIFT button ❹.

⓭ TIMER (◔) button
⓮ CLOCK button
⓯ DOWN/UP buttons
⓰ TIMER ON/OFF (◔) button
⓱ ENTER button
⓲ INTRO button
⓳ PROGRAM button
⓴ DISPLAY button
㉑ RANDOM button
㉒ REPEAT button

ATTACHING/DETACHING THE SPEAKERS

When using the speakers attached to the main unit
Hold with the bottom of the speaker against the top of the main unit and press down on the speaker to attach it.

Press the speaker down with the speaker and main unit aligned.

Speaker slot

Main unit

SHIFT button

JVC
REMOTE CONTROL RM-RX110
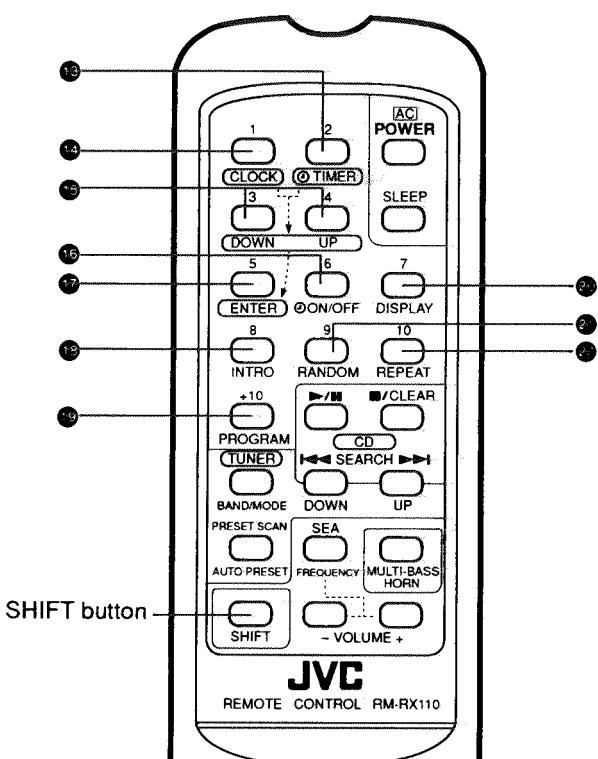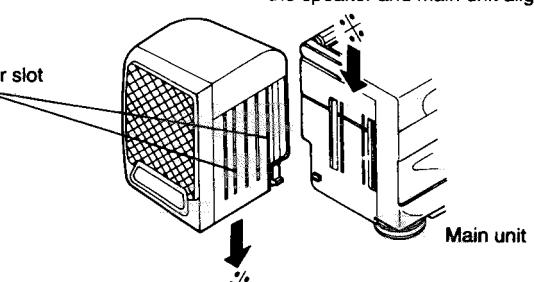
When using the speakers detached from the main unit
Lift the speaker up to detach from the main unit by pressing the lock lever at the rear bottom of speaker in the direction of the arrow.
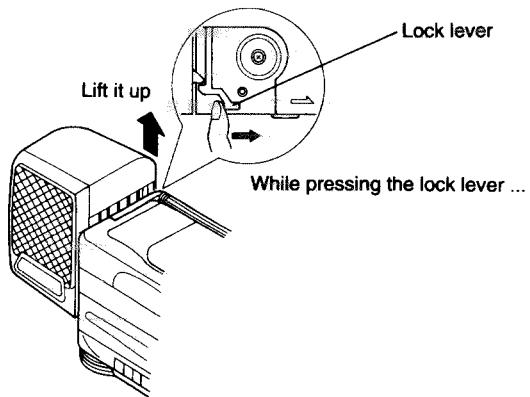
Note:
Since the speakers sound differently according to where they are placed, carefully place them for optimal effect within the length of the provided speaker cords. It is recommended that the left and right speakers be placed symmetrically in relation to the main unit.

Lock lever

Lift it up

While pressing the lock lever ...

CONNECTIONS

● Do not switch the power on until all the connections are completed.

* After connecting the speaker cords, bundle any slack into the space for the speaker cords in the rear panel.

● When connecting the speaker cords, connect the one marked with a line to the "–" terminal first.

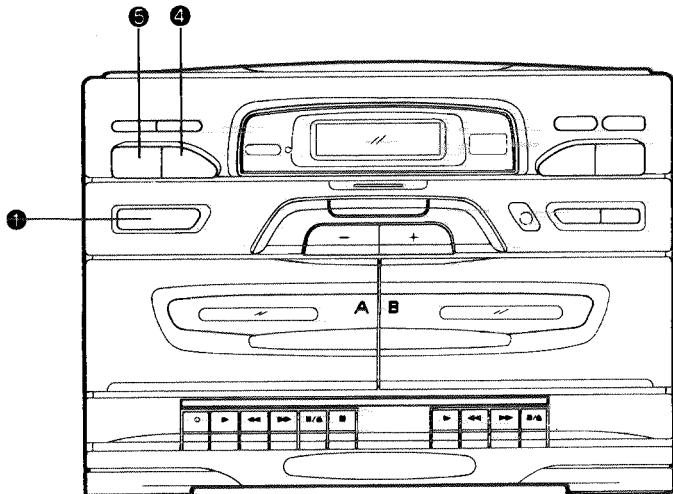* Space for speaker cords
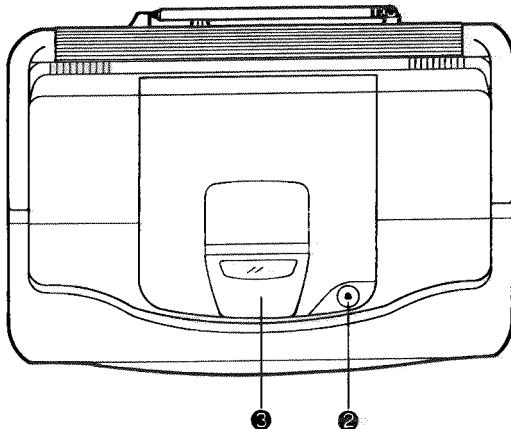
① ② ③

● Marked with line
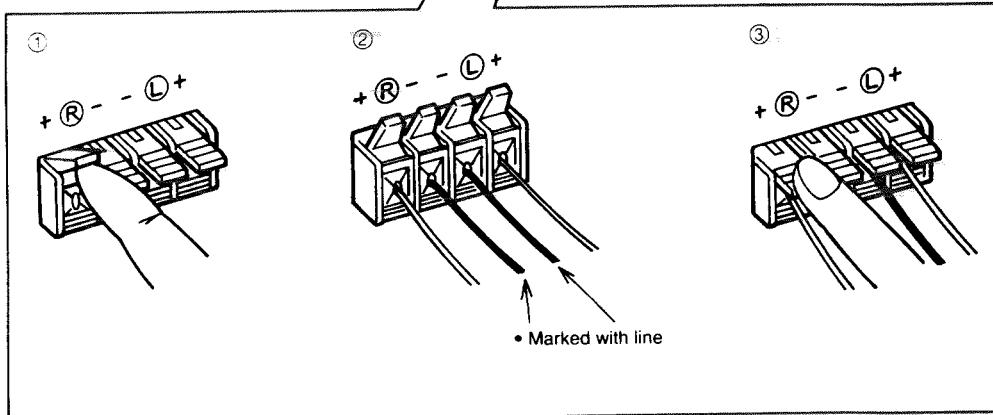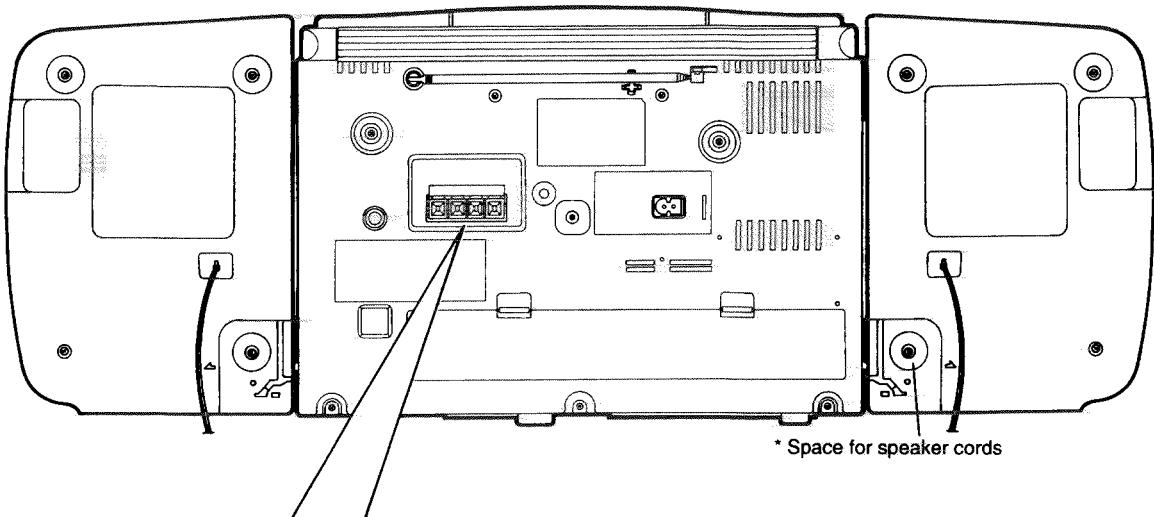
PLAYING COMPACT DISCS

Playing an entire disc ... The following example assumes a compact disc with 12 tunes and a total playing time of 48 minutes 57 seconds.

Operate in the order shown

❶ Set the POWER button to on.
❷ Press to open the Disc holder.
❸ Load a disc with the label side facing up and close the Disc holder.
❹ Set to the CD mode.
  ● If the PLAY button of deck A or B is pressed, press the STOP/EJECT (■/▲) button to set to the stop mode.
  ● When a CD is first loaded, the total number of tracks (tunes) and total playing time are displayed.
❺ Press to start play.
  ● As tunes are played, their track numbers go out one by one.

  ● 8-cm (3-3/16") compact discs can be used in this unit without an adapter.

To adjust the SEA (FREQUENCY) electronic equalizer

Press the SEA (FREQUENCY) button to select the electronic equalizer frequency band (100 Hz/1 kHz/10 kHz) to be adjusted. Within about 5 seconds, press the VOLUME button (+/−) to adjust the level within a range of −5 to 5. (Level should be adjusted in each frequency band.)

SEA
ELECTRONIC EQ

Clear
Cancelación
Annulation

10 kHz
1 kHz
100 Hz

VOLUME −   VOLUME +
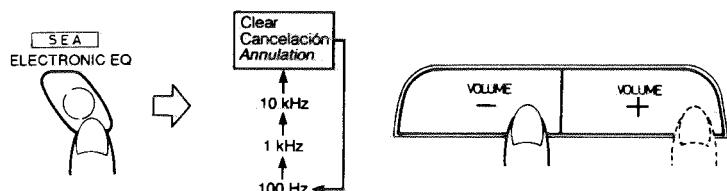
To stop play

● **To stop in the middle of a disc**
  During playback, press the ☐/CLEAR button to stop play.

☐/CLEAR

TRACK
12 48:57

● **To stop a disc temporarily**
Press the ▷❚❚ button to stop play temporarily. When pressed again, play resumes from the point where it was paused.
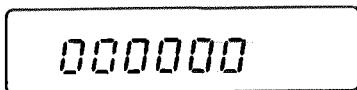
Caution:
● To change discs, press the ☐/CLEAR button; check that the disc has stopped rotating completely before unloading it.

Notes:
● The following indication may be shown when a disc is dirty or scratched, or when the disc is loaded upside down.
In such a case, check the disc and insert again after cleaning the disc or turning it over.

```
□□□□□□
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● **Do not use the unit at excessive high or cold temperatures. The recommended temperature range is from 5°C (41°F) to 35°C (95°F).**
● After playback, unload the disc and close the Disc holder.
● If mistracking occurs during play, lower the volume.
● Mistracking may occur if a strong shock is applied to the unit or if it is used in a place subject to vibrations (i.e. in a car travelling on a rough road).

Skip playback

● During playback, it is possible to skip forward to the beginning of the next tune or back to the beginning of the tune being played or the previous tune; when the beginning of the required tune has been located, play starts automatically.

To listen to the next tune ...
Press the ▶▶❘ button once to skip to the beginning of the next tune.

To listen to the previous tune ...
Press the ❘◀◀ button to skip to the beginning of the tune being played back and press again to skip to the beginning of the previous tune.

## Search playback (to locate the required position on the disc)

● The required position can be located using fast-forward or reverse search while playing a disc.

◀◀ SEARCH ▶▶
/ SKIP

Keep pressing for fast-reverse search —— Keep pressing for fast-forward search

● Hold down the button; search play starts slowly and then gradually increases in speed.
● Since low-volume sound (at about one quarter of the normal level) can be heard in the search mode, monitor the sound and release the button when the required position is located.

Direct access playback (using the remote control)

● Pressing any of the track number buttons will start playing from the beginning of the designated tune, without your having to press the CD ▶/❚❚ button. (This function cannot be used during programmed play.)

❶
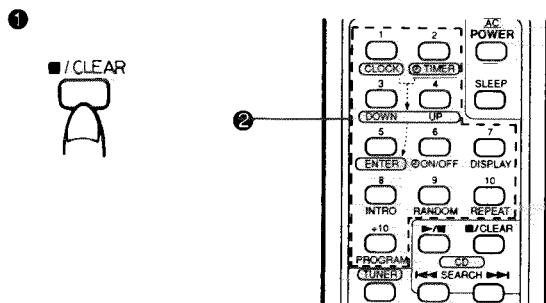
■ / CLEAR

❶ Press the ■/CLEAR button to set to the CD mode.
  ● If the PLAY button of the deck A or B is pressed, press the STOP/EJECT (■/▲) button to set to the stop mode.
❷ Designate the required tune using the track number buttons.
  ● To designate tune numbers 1 to 10, press the track number button corresponding to the tune (track) number.
  ● To designate tune number 11 or higher, press the +10 button the required number of times, then the track number button. (Example: To designate the 20th tune, press the +10 button once, then press track number button 10.)
* +10 button:
Each time this button is pressed, the number increases by 10. First press this button to set the 10's digit, then press the track number button to set the 1's digit.

● **To skip to another tune during play**
When the required track number button is pressed, the display shows the designated track number and play starts from the beginning of the designated tune.

Programmed play (using the remote control)

● Up to 20 tunes can be programmed to be played in any
required order.
The total playing time of programmed tunes is displayed
(up to 99 minutes, 59 seconds).
(Example: When programming the 2nd tune to be
played first, the 6th tune next, and then the 12th tune,
etc.)

① Press the ■/CLEAR button.
② Press the PROGRAM button while pressing the SHIFT
button to set to the programming mode.
③ Press to designate the required track number.
④ Designate the remaining tunes by pressing the track
number buttons.
⑤ Press the ►/Ⅱ button when programming is completed.
Programmed playback starts.

To clear the programmed tunes ...
Press the ■/CLEAR button before playing a disc. During
programmed playback, press this button twice. When the
Disc holder is opened, programmed tunes are cleared
automatically.

To designate the 2nd tune.

To designate the 12th tune.

The total playback time of programmed tunes is displayed.

The 12th tune
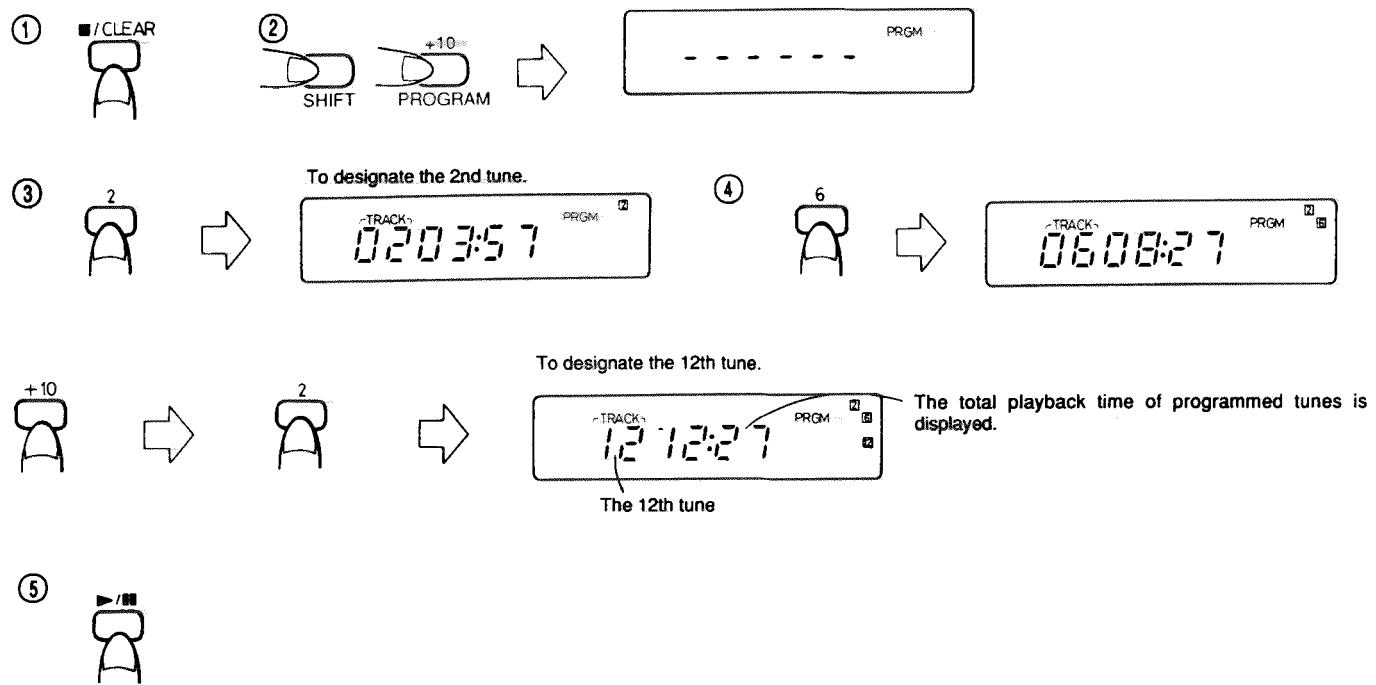
To confirm the details of a program ...
Press the PROGRAM button while pressing the SHIFT
botton; the tunes making up the program will be displayed
in programmed order.

Tune number   Program order number
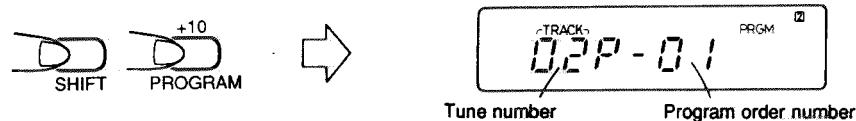
Notes:
1. If the total playing time of the programmed tunes
exceeds 99 minutes 59 seconds, the total playing time
indication will go out.
2. It is not possible to program more than 20 tunes.
3. When a disc with 16 or more tunes is loaded, the
"OVER" indicator will appear.
4. When a track number that is higher than 21 is pro-
grammed for a disc which contains more than 21 tunes,
the track No. is displayed, however, "--:--" is shown in
the total playback time.
5. When performing timer playback in the order of "Pro-
grammed play", step ⑤ above is not required.

Repeat play (using the remote control)

Press the REPEAT button while pressing the SHIFT button before or during play. A single tune or all the tunes can be repeated.

Whether a single tune or all tunes are to be repeated can be specified. Each time the REPEAT button is pressed while pressing the SHIFT botton the mode will change from a single tune (⊂), to all the tunes (⊂ ALL), to the clear mode, in this order.

Single tune ⇨ All tunes ⊂ ALL ⇨ Goes off

Repeat playback is released.

SHIFT   REPEAT
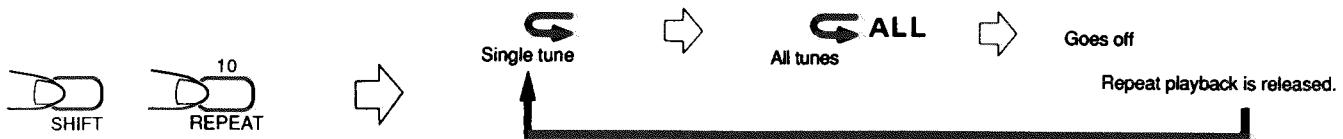
- **Repeat playback of a single tune (⊂)**
  The tune being played back will be heard repeatedly.

- **Repeat playback of all tunes (⊂ ALL)**
  When playing back an entire disc or programmed tunes, all tunes or the programmed tunes will be heard repeatedly.

Random playback (using the remote control)

Press the RANDOM button while pressing the SHIFT button, all tunes on a disc are played once, in random order.

### INTRO scan operation (using the remote control)

- Simply press the INTRO scan button while pressing the SHIFT button, to play the first 15 seconds of each tune. The operation is released after playing the introductions of all tunes or all programmed tunes.
- If the INTRO scan button is pressed in the middle of a tune while pressing the SHIFT button, the intro scan operation will start from the next tune.
- To release the intro scan mode, press the INTRO scan button again while pressing the SHIFT button, and normal playback (or programmed playback) will resume.

CASSETTE PLAYBACK

(The example shows Deck A)

Operate in the order shown
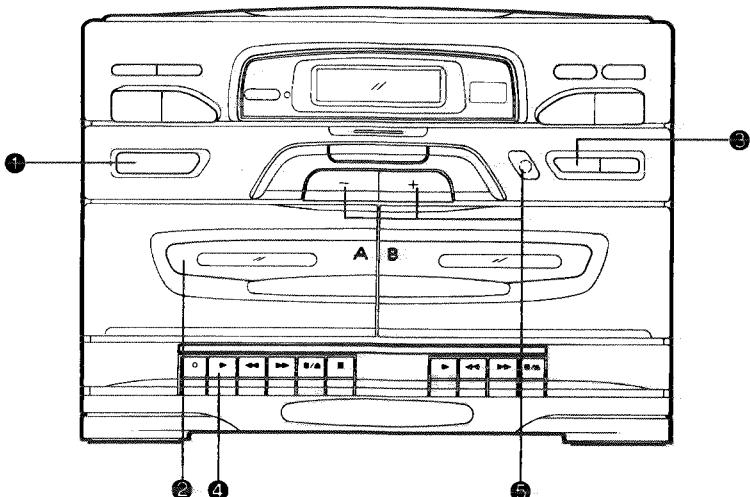
❶ Set the POWER button to on.
❷ Load a cassette tape in Deck A.
❸ Set the TAPE switch as required.
❹ Press to start playback.
❺ Adjust.

- **Playback in Deck B**
  The previous procedures ❸ through ❹ also apply to Deck B when a cassette is loaded in Deck B. When Decks A and B are simultaneously set to the play mode, only the playback sound of Deck B is heard.

Notes:
1. When the power is turned off while the tape is still running, cassette operation buttons which are depressed do not return to the original positions.
   Press the STOP/EJECT (■/▲) button to stop the tape running before turning off the power.
2. Avoid operating the FF or REW button on the deck during playback of the other deck.

RELAY PLAYBACK

(From Deck B to Deck A)
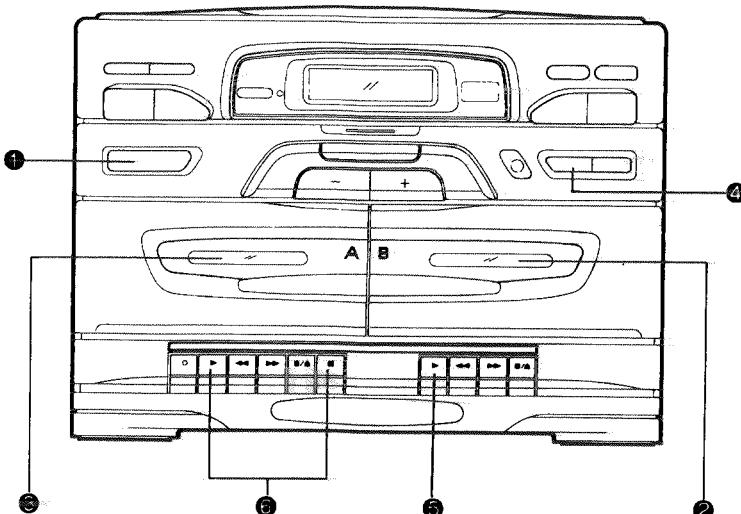
Operate in the order shown

❶ Set the POWER button to on.
❷ Load a cassette tape in Deck B.
❸ Load a cassette tape in Deck A.
❹ Set the TAPE switch as required.
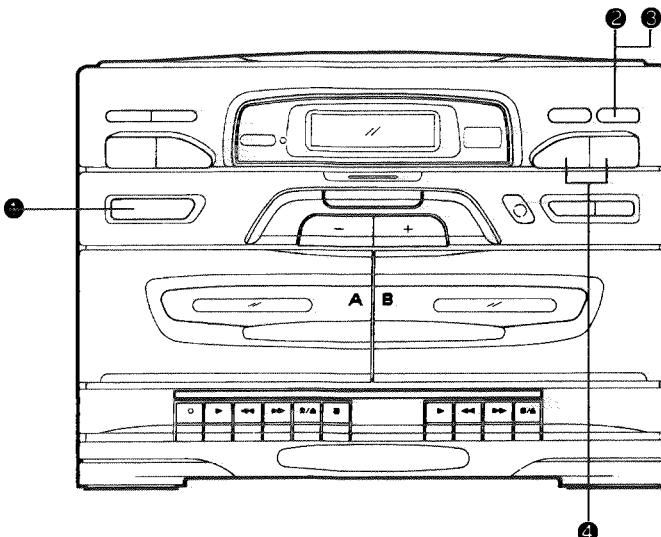❺ Press the ► PLAY button on Deck B.
❻ Set Deck A to the play-pause mode.

* When Deck B stops, Deck A's pause mode will be released and it will start playback. When Deck A stops automatically, relay playback will be released.

Note:
Use the same type of tape in Decks A and B during this mode.

RADIO RECEPTION

Operate in the order shown

❶ Set the POWER button to on.
❷ Press the TUNER/BAND button; a band and radio frequency will be shown in the display.
  ● If the PLAY button of the deck is pressed, press the STOP/EJECT (■/▲) to set to the stop mode.
❸ Select the band/FM mode (FM auto, FM MONO or AM (MW/LW)).
❹ Tune to the required station.

FM MODE button

Auto mode:
Set to this position when listening to or recording an FM stereo broadcast. The STEREO indicator lights when a FM stereo broadcast is received.

MONO:
Set to this position when FM stereo reception is noisy. When another station is tuned to in the MONO mode using the TUNING UP/DOWN or PRESET SCAN/AUTO PRESET button, the unit automatically enters Auto mode.
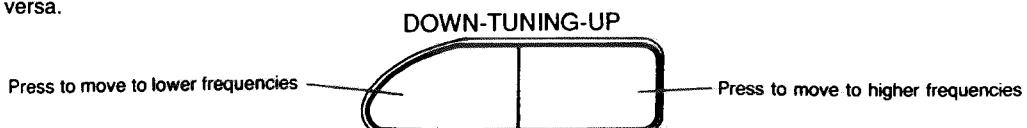
● **Seek tuning**
   Press the UP or DOWN button for one second or more; the unit enters the seek tuning mode and tunes to higher or lower frequencies, and when the broadcast is received, it stops tuning automatically and the broadcast can be heard.
   In AM operation, the frequency moves continuously from the MW to the LW band and vice versa.

● **Manual tuning**
   Each time the UP or DOWN button is pressed, the unit steps through the current frequency band. Tuning is in steps of 50 kHz for FM and 9 kHz for AM(MW/LW).
   In AM operation, the frequency moves continuously from the MW (522 - 1,629 kHz) to the LW (144 - 288 KHz) band and vice versa.

DOWN-TUNING-UP

Press to move to lower frequencies ——   —— Press to move to higher frequencies

Notes:
● When seek tuning to the required station is not possible because it is broadcasting too weak a signal, press the UP or DOWN button momentarily to perform manual tuning.
● When the power is set to STANDBY, or another mode (TAPE or CD) is selected, the last tuned frequency is stored in memory. When the power is switched on again and TUNER/BAND button is pressed, the same station will be heard.
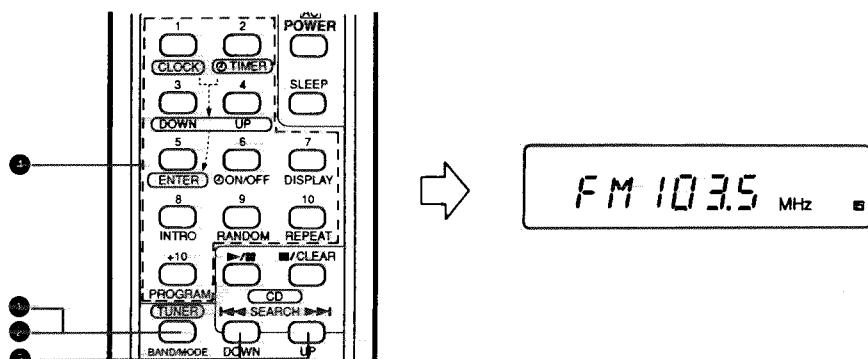
Auto preset tuning

This function scans the current band (FM or AM(MW/LW)), detecting frequencies used to broadcast signals, and stores the first 15 frequencies in memory automatically.
● Press the AUTO PRESET button for more than 2 seconds. The frequencies of stations broadcasting signals can be preset automatically in the order of increasing frequency. (15 stations in each band (FM and AM(MW/LW.)))

Presetting stations (using the remote control unit)

15 stations in each band (FM and AM (MW/LW)) can be preset as follows:
● Example (when presetting an FM station broadcasting at 103.5 MHz to preset button "15")

$$\Rightarrow \quad FM\ 103.5\ \text{MHz}$$

❶ Press the TUNER/BAND button.
❷ Select the FM band using the TUNER/BAND button.
❸ Tune to the required station.
❹ Press preset button "+10", then "5" for more than 2 sec. (When "15" blinks in the preset station display, the station has been preset.)
● Repeat the above procedure for each of the other stations, using a different preset button each time.
● Repeat the above procedure for the AM(MW/LW) band.

● **To change preset stations**
   Perform step ❹ above after tuning to the required station.

Notes:
● The previous preset station is erased when a new station is set as the new station's frequency replaces the previous frequency in memory.
● When listening to an AM(MW/LW) broadcast, noise may be heard if the remote control is used.

Preset tuning (using the remote control unit)

● The stations must be preset before this operation can be performed.
① Press the TUNER/BAND button.
② Select the band (FM or AM(MW/LW)) using the TUNER /BAND button.
③ Press the required preset station buttons (No. 1 – No. 10, +10).
● The preset station number and frequency corresponding to the button pressed are shown.

Preset scan button tuning

● This makes it possible to automatically scan preset FM and AM(MW/LW) stations.

① Press the PRESET SCAN button.
② Scanning is performed in the order of preset station in each frequency band (FM and AM(MW/LW)). Each preset station is heard for approx. 5 seconds.
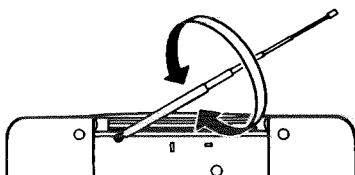③ When the required station is heard and its frequency is blinking, press the PRESET SCAN button again.

Note:
Up to 15 broadcast stations in each band can be preset on the PC-X110. If the preset scan operation is performed without all 15 stations having been preset, noise may be heard under certain conditions when non-preset stations are scanned.
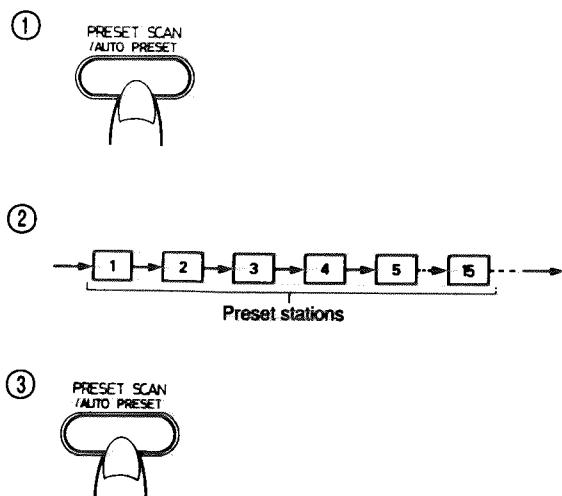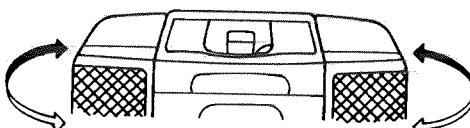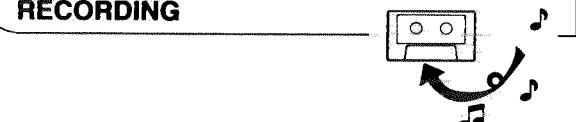
Using the antennas

FM

MW/LW

Note:
The built-in ferrite core antenna can pick up interference from television receivers in the neighborhood and thereby disturb AM(MW/LW) reception.

① PRESET SCAN /AUTO PRESET

②

Preset stations

③ PRESET SCAN /AUTO PRESET

RECORDING

● In recording, the ALC circuit automatically optimizes the recording level; adjustment of the recording level is unnecessary.
● Check that the safety tab on the cassette tape is not broken off.

Notes:
1. The recording characteristics of this unit are those of normal tape. Normal tape has different characteristics from CrO_2 and metal tapes.
2. Do not operate any button on deck B during recording.

It should be noted that it may be unlawful to re-record pre-recorded tapes, records, or discs without the consent of the owner of copyright in the sound or video recording, broadcast or cable programme and in any literary, dramatic, musical, or artistic work embodied therein.

Synchronized recording with the CD player

- In this system, the CD player starts playback when Deck A enters the recording mode.

Operate in the order shown
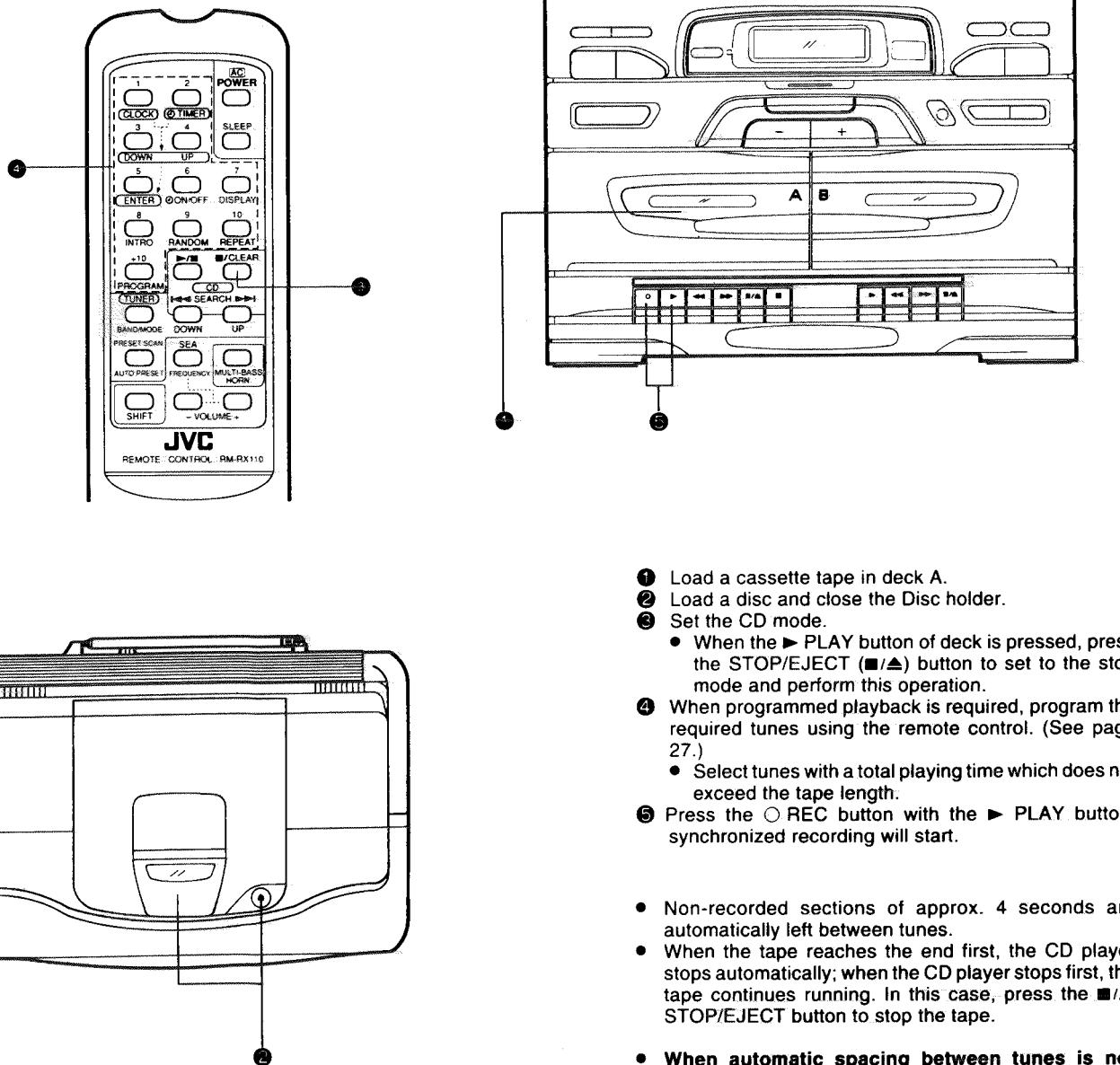
❶ Load a cassette tape in deck A.
❷ Load a disc and close the Disc holder.
❸ Set the CD mode.
  - When the ► PLAY button of deck is pressed, press the STOP/EJECT (■/▲) button to set to the stop mode and perform this operation.
❹ When programmed playback is required, program the required tunes using the remote control. (See page 27.)
  - Select tunes with a total playing time which does not exceed the tape length.
❺ Press the ○ REC button with the ► PLAY button; synchronized recording will start.

- Non-recorded sections of approx. 4 seconds are automatically left between tunes.
- When the tape reaches the end first, the CD player stops automatically; when the CD player stops first, the tape continues running. In this case, press the ■/▲ STOP/EJECT button to stop the tape.

- **When automatic spacing between tunes is not required ...**
  Perform the following after finishing the previous operation (❶ to ❹).
  ① Press the ▷ΙΙ PLAY/PAUSE button of the CD player twice. The CD player enters the pause mode.
 ② Press the ○REC and ► PLAY buttons simultaneously. Now, the CD player starts playback simultaneously.

> **Note:**
> To record a compact disc, be sure to check that the track (tune) number and playing time are displayed on the display window before pressing the ○ REC button and ► PLAY button.

DUBBING (SYNCHRO START DUBBING)
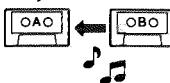
Normal and high-speed dubbing can be done from Deck B to Deck A.

Operate in the order shown
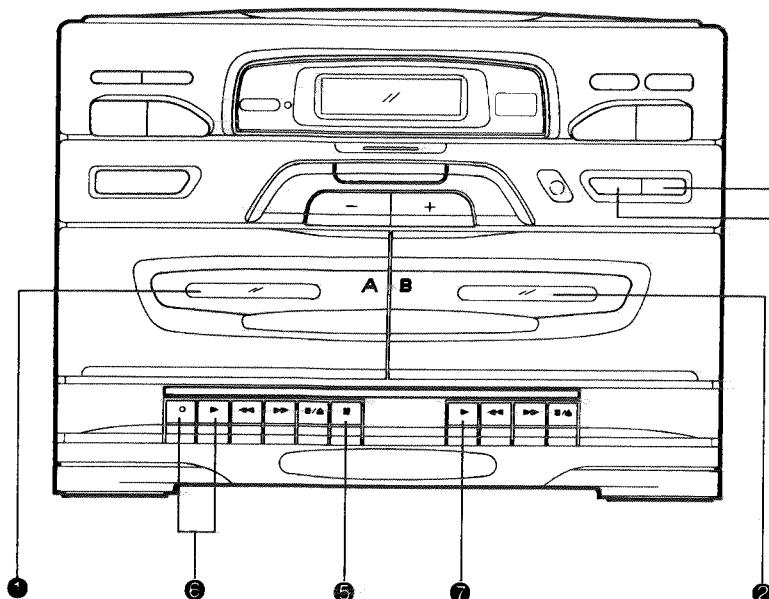
❶ Load a cassette tape in deck A. (Refer to the note on page 38.)
❷ Load a pre-recorded cassette tape in deck B.
• Slightly press the ► PLAY button to set to TAPE mode. (The button should not be locked.)
❸ Set to NORMAL SPEED or HIGH SPEED.
❹ Set to correspond to the type of tape in Deck B.
❺ Press the ‖ PAUSE button.
❻ Press the ○ REC button with the ► PLAY button. (Record-pause mode.)
❼ Press the ► PLAY button. (Synchronized dubbing will start.)

Notes:
1. Television receivers placed close to this unit may cause interference on the recorded signal when this unit is used in the high-speed dubbing mode. If this happens, either turn off the television receiver or use the normal-speed dubbing mode.
2. With Deck A in the record-pause mode, the ‖ PAUSE button is released when Deck B enters the stop mode.

Recording from the radio

Operate in the order shown
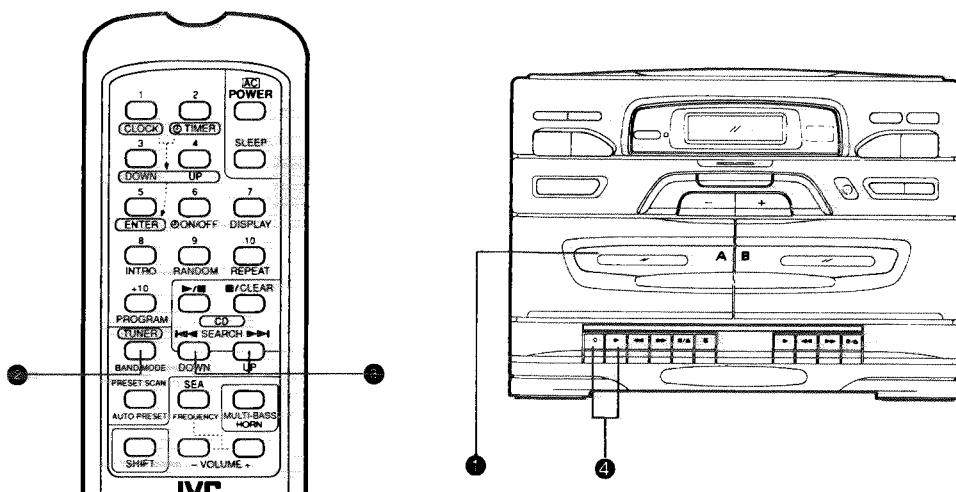
❶ Load a cassette. (Deck A)
❷ Press the TUNER/BAND button.
❸ Tune to the required station.
❹ Press the ○ REC button with the ► PLAY button.

• To stop recording temporarily, press the ‖ PAUSE button. To resume recording, press the ‖ PAUSE button again.

Erasing

When recording on a pre-recorded tape, the previous recording is automatically erased and only the new material can be heard when the tape is played.
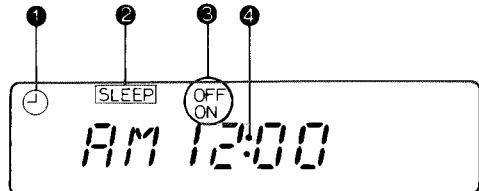**To erase a tape without making a new recording ...**
Slightly press the ► PLAY button of the deck to set to the TAPE mode and press the ○ REC and ► PLAY buttons together after pressing the stop button.
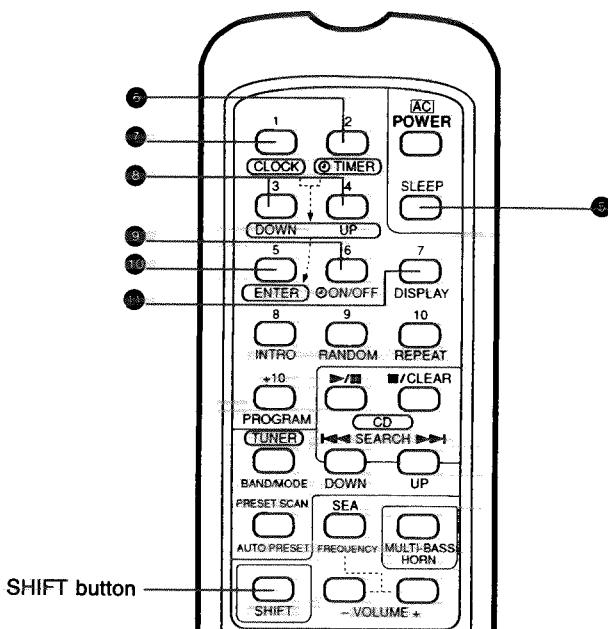
CLOCK ADJUSTMENT

(Using the remote control)

Names of parts in the clock/time section, and their functions:

❶ Timer mode indicator
❷ SLEEP indicator
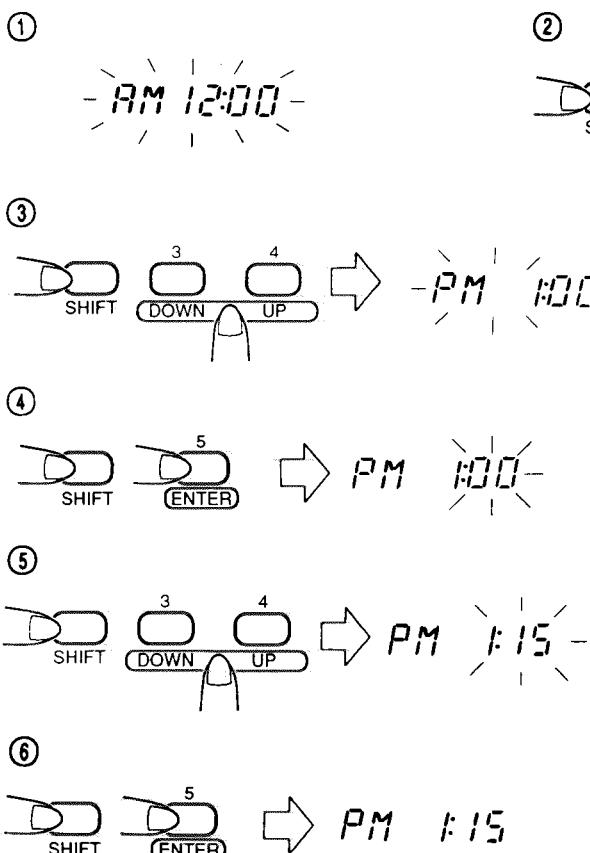❸ Timer indicator (ON/OFF)
❹ Time display
❺ SLEEP button

(Press the following buttons while holding down the SHIFT button)
❻ Timer (⏱) button
❼ CLOCK button
❽ DOWN/UP button
❾ TIMER ON/OFF (⏱) button
❿ ENTER button
⓫ DISPLAY button
Use to display a current time.

SHIFT button

Setting the current time
(when the PC-X110 is used first time)

(Example: to set the clock to PM 1:15)

①

②

③

④

⑤

⑥

① Connect the AC power cord; "AM 12:00" will blink in the display.
  ● Set the POWER button to on.
② Press the CLOCK button while pressing the SHIFT button; the hour's digits will blink.
③ Set to PM 1:00 by pressing the UP/DOWN buttons while pressing the SHIFT button.
④ Press the ENTER button while pressing the SHIFT button; the minute's digits will blink.
⑤ Set to PM 1:15 by pressing the UP/DOWN buttons while pressing the SHIFT button.
⑥ Press the ENTER button while pressing the SHIFT button; the time will light in the display.

● Each time the hour's digits change from 11 to 12, the display alternates between AM and PM. (12 midnight is indicted as "AM 12:00" and 12 noon is indicated as "PM 12:00")
● To set to the nearest second ...
  Press the ENTER button while pressing the SHIFT button when you hear the time signal from a TV or radio.

Notes:
● Before performing timer recording or playback, it is necessary to set the current time.
● Press the DISPLAY button while pressing the SHIFT button to display the current time durning CD play, tape play or radio reception. The current time will be displayed for 10 seconds after which the display returns to the previous mode.
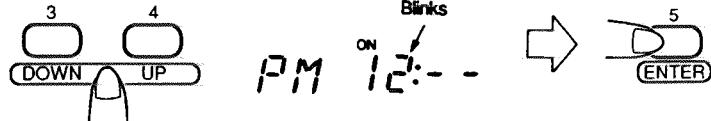
TIMER OPERATIONS

Setting the timer

- The current time must be set before the timer can be used.
- ❶ Set the POWER button to on.
- ❷ Preset the TIMER (⊙) button while pressing the SHIFT button.
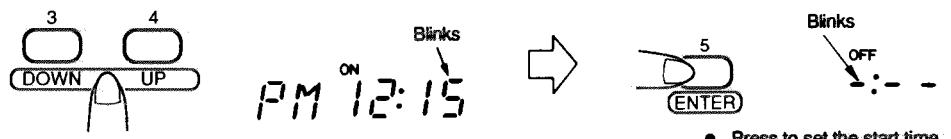
SHIFT   ⊙ TIMER

Blinks
ON
`¦:- -`
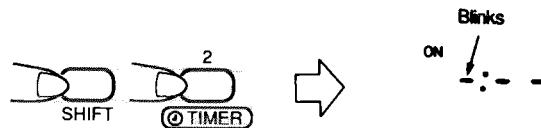
While pressing the SHIFT button.

❸ Set the start time.
(Example: when the timer start time is set to PM 12:15)
① Adjust the hours.

3   4
DOWN   UP

`PM 12:- -` ON Blinks

5
ENTER

② Adjust the minutes.

3   4
DOWN   UP
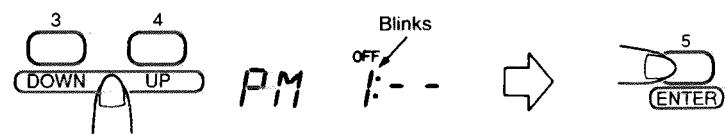
`PM 12:15` ON Blinks

5
ENTER

`:- -` OFF Blinks

- Press to set the start time.

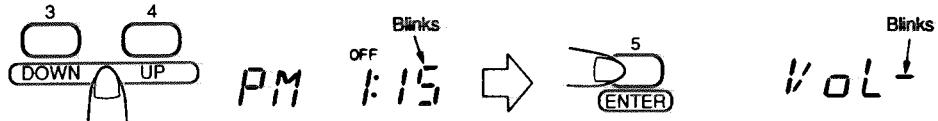**While pressing the SHIFT button.**

❹ Set the stop time.
(Example: when the timer stop time is set to PM 1:15)
① Adjust the hours.

3   4
DOWN   UP

`PM 1:- -` OFF Blinks

5
ENTER

② Adjust the minutes.

3   4
DOWN   UP

`PM 1:15` OFF Blinks

5
ENTER

`VoL` Blinks

- Press to set the timer off time.

While pressing the SHIFT button.

❺ Set the volume.

3   4
DOWN   UP

`VoL 15`

5
ENTER
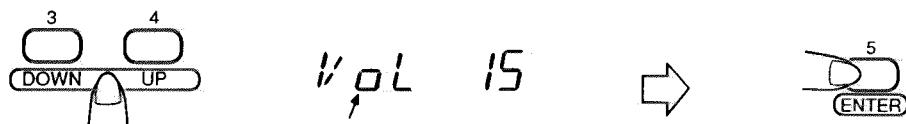
This shows when volume level 15 is selected.

- The selected volume is set.

The playback level is determined by the position of VOLUME control.

When the UP button is used to select the volume.

`VoL -` → `VoL 0` → `VoL 15` → `VoL 25`

The volume decreases to zero at the timer start time, and the sound fades in.
- The unit enters the previously engaged mode and timer setting is completed.

- **To check the timer setting**
1. Press the TIMER ON/OFF (⏲) button while pressing the SHIFT button.
2. When the previous engaged mode is displayed, timer setting has been completed.

Notes:
- When the timer is set incorrectly or the correct mode is not selected, perform "Setting the timer" from the beginning.
- When the timer is set, "-:--" in the display is replaced by the input digits.
- When the timer stop time is not set, the timer operates for 2 hours and then the unit is switched off. To continue listening after the timer stop time, display the timer stop time, change the hours digits to " -:" using the UP button and press the ENTER button.

Timer recording

- The current time must be set correctly before you set timer recording.
- Make sure that the erase protection tabs of the cassette have not been broken off.

Operations
1. Set the POWER button to on.
2. Load a cassette in Deck A.
   - Insert the cassette with the side to be recorded facing out.
3. Set the timer start and stop times, then set the required volume, in this order. (Refer to "Setting the timer" on page 46.)
   - Set the timer about a minute before the broadcast to be recorded is scheduled to start.
4. Press the TUNER/BAND button.
   - Tune to the station to be recorded. (Refer to page 33.)
5. Set the POWER button to STANDBY.
6. Press the ○ REC and ► PLAY buttons of deck simultaneously.

Note:
Timer recording will start at the preset start time. The power will not be switched off at the timer-off time during tape operation, but will be switched off when the tape ends.

- **To cancel timer operation**
Set the POWER button to on, then press the TIMER ON/OFF (⏲) while pressing the SHIFT button, so that the timer mode indicator (⏲) goes out.

If you do this, timer recording will not start at the timer start time.

Note:
Once the timer has been set, the start and stop times, etc., are stored in memory. When timer recording or playback is required at different times, the timer must be set again.
- After setting the timer start and stop times, check that the unit is tuned to the required frequency.

Timer playback

- Timer playback of tapes, broadcasts and CDs is possible.

Operations
1. Set the POWER button to on.
2. Set the timer start and stop times, then set the volume, in this order. (Refer to "Setting the timer" on page 46.)
3. Select the source sound.

Source sound	Timer mode	Operations
CD play	CD	Load a disc and press the □ STOP/CLEAR button to set the CD mode.
Tape playback	TAPE	Load a cassette tape.
Radio broadcast	TUNER	Press the TUNER/BAND button to set to the tuner mode and tune to the required frequency.

- Timer playback of a CD is possible in programmed order. (See page 27.)
- The volume can be set to 25 different levels.
4. Switch the power off.
   (When performing the timer playback of tape, press the ► PLAY button of the deck.)
- Timer playback will start at the timer start time and the power will be switched off at the timer stop time. (Tuner or CD)
   The power will not be switched off at the specified time during tape operation and will be switched off at the tape end.
   The unit remains in the same timer mode even after the power is switched off and the same timer function will be repeated at the same time on the following day.

● Volume setting and fade-in operation
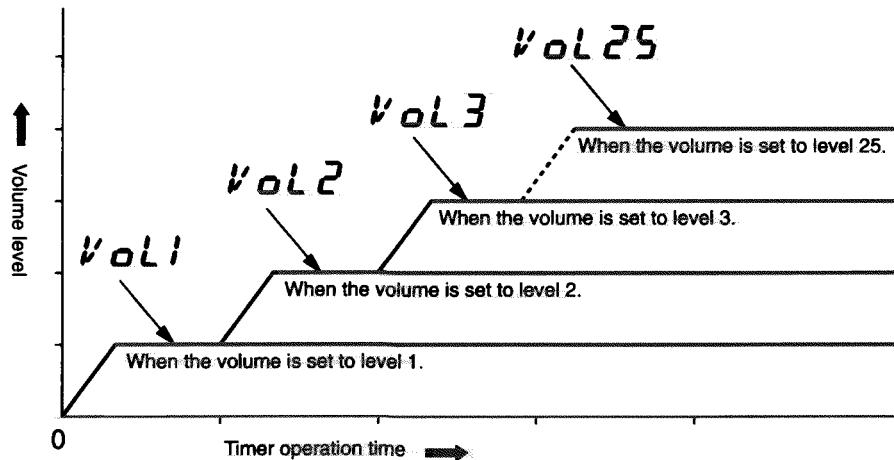
● When the power is switched on, it is possible to fade in the sound from volume level 0 (zero) to the preset volume.

● **To cancel timer operation**
Set the POWER button to on, then press the TIMER ON/OFF (⏱) button while pressing the SHIFT button, so that the timer mode indicator (⏱) goes out.

Notes:
● When the volume setting is set to "Vol -" (volume level is not specified), the timer playback volume is set to that of before setting the timer.
● To stop during timer playback, press the POWER button to switch the unit off.
● In the fade-in mode, the volume gradually increases from zero.

SLEEP OPERATIONS

**Use this when you want to fall asleep while listening to a tape, radio broadcast or CD.**

① Set to the required source.

	Operations
Radio broadcast	Press the TUNER/BAND button to set to the tuner mode and tune to the required frequency.
CD play	Load a disc and press the ►/❚❚ button to play the disc.
Tape playback	Load a cassette and press the ► PLAY button to play back the tape.

② Press the SLEEP button to set to the sleep time.

SLEEP

[SLEEP] is shown in the display

30 → 60 → 90 → 120 ⤴

Source mode display (Releasing the sleep mode)
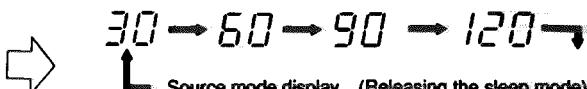
● Sleep times of 30, 60, 90 or 120 minutes can be set.
When you release the SLEEP button, the source is displayed after 10 sec.

● The sleep operation will start and the power will be switched off after the specified time. (Tuner & CD modes)
The power will not be switched off at the specified time during tape operation and will be switched off at the tape end.

● **Checking the sleep time**
When the SLEEP button is pressed, the remaining sleep time is displayed. If it is pressed again, a new sleep time can be set.

● **To cancel the sleep operation**
Press the POWER button to switch the power off or press the SLEEP button until the sleep time indicator disappears.